

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Request for Examiner Interview

Applicants respectfully requests an Examiner Interview on October 30, 2007 at 11:00 AM (EST) or at a date/time convenient for all parties. An Applicant Initiated Interview Request Form is attached to this response.

Disposition of Claims

Claims 1-30 were pending in this application. Claims 18-29 have been cancelled by this reply without prejudice or disclaimer. New claims 31-37 have been added by this reply. With respect to the pending claims, claims 1 and 30 are independent. The remaining pending claims depend, directly or indirectly, on claim 1.

Claim Amendments

Claims 1 and 30 have been amended to clarify the invention and correct minor typographical errors. Support for the amendments may be found, for example, in paragraphs [0042]-[0044] of the original specification. Claim 4 has been amended to clarify the term "half unit in last place." Support for this amendment may be found, for example, in paragraph [0030] of the original specification. Claim 5 has been amended for consistency with amendments made to dependent claim 4. Claim 6 has been amended in accordance with the Examiner's suggestion. Support for this

amendment may be found, for example, in paragraph [0033] of the original specification. Finally, claim 9 has been amended for consistency with amendments made to independent claim 1. No new matter has been added by any of the aforementioned amendments.

Claim Objection

Claims 26 and 29 are objected under 37 C.F.R. § 1.75(c). Claims 26 and 29 have been cancelled by this reply. Accordingly, this objection is now moot and withdrawal of this objection is respectfully requested.

Claims 1, 6, and 28 are objected for including informalities. Claim 28 is cancelled by this reply. Accordingly, this objection is now moot with respect to cancelled claim 28. With respect to claims 1 and 6, claims 1 and 6 have been amended to address the informalities noted by the Examiner. Accordingly, withdrawal of this objection is respectfully requested.

Rejections under 35 U.S.C. § 112

Claim 28 stands rejected under 35 U.S.C. § 112. Claim 28 is cancelled by this reply. Accordingly, this rejection is now moot with respect to cancelled claim 28. Accordingly, this rejection is now moot and withdrawal of this objection is respectfully requested.

Claims 1-30 stand rejected under 35 U.S.C. § 112 for included the term “accuracy-aware tracking structure,” which the Examiner asserts is not clear. Claims 18-29 are cancelled by this reply. Accordingly, this rejection is now moot with respect to cancelled claims 18-29. With respect to claims 1-17 and 30, the rejection is respectfully traversed.

At the outset, the Applicants note that the term “accuracy-aware tracking structure” is explicitly defined in the specification, *see e.g.*, [0017]-[0018], [0028] of the original specification. Moreover, the claims have been amended to clarify how the “accuracy-aware tracking structure” is used, namely,

...wherein executing the instrumented compiled code comprises using the accuracy-aware tracking structure to track a plurality of operations applied to the floating-point variable, wherein data stored in the accuracy-aware tracking structure is used to determine error resulting from applying the plurality of operations and which of the plurality of operations caused the error.

In view of the above, Applicants assert that the meaning of the term “accuracy-aware tracking structure” is clear from the description in the original specification as well as from the usage in the pending claims. Accordingly, this rejection is now moot and withdrawal of this rejection is respectfully requested.

Claims 4, 5, 21, 22, 28, and 29 stand rejected under 35 U.S.C. § 112 for including the term “half unit in last place variable,” which the Examiner asserts is not clear. Claims 21, 22, 28, and 29 are cancelled by this reply. Accordingly, this objection is now moot with respect to cancelled claims 21, 22, 28, and 29. With respect to claims 4 and 5, the rejection is respectfully traversed.

Claim 4 has been amended to explicitly recite the definition of the term “half unit in last place.” Thus, amended claim 4 now satisfies 35 U.S.C. § 112. Further, amended claim 5 depends from amended claim 4 and, accordingly, now also satisfies 35 U.S.C. § 112. Withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 101

Claims 18-29 are rejected under 35 U.S.C. §101. Claims 18-29 have been cancelled by this reply. Accordingly, this rejection is now moot and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-11, 13-27, 29, and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,085,029 ("Kolawa") in view of the article entitled "Precise Computation Using Range Arithmetic" ("Aberth"). Claims 18-27 and 29 are cancelled by this reply. Accordingly, this rejection is now moot with respect to cancelled claims 18-27 and 29. With respect to claims 1-11, 13-17 and 30, the rejection is respectfully traversed.

In order to establish a *prima facie* case of obviousness, the cited references must teach or suggest all the limitations of the claims. *See* MPEP § 2143. The Examiner admits that Kolawa fails to disclose "source code comprises[sic] a floating[[-]]point variable and using the accuracy-aware tracking structure to track an operation on a floating-point variable" (*See* Office Action mailed July 2, 2007, p. 7). Rather, the Examiner relies on Aberth to teach that which Kolawa lacks.

The Applicants respectfully assert that Kolawa fails to teach or suggest that which Aberth lacks. Specifically, Aberth is limited to using range arithmetic to calculate a result based on a preset precision (*see* Aberth, p. 488). However, Aberth is silent with respect to: (i) tracking operations performed on a floating point value; (ii) determining an error resulting from applying the plurality of operations; and (iii) determining which of the plurality of operations caused the error, as recited in the claims. In view of the above, the Examiner has failed to establish a *prima facie* case of

obviousness using Kolawa and Aberth. Accordingly, claims 1-11, 13-17, and 30 are patentable over Kolawa and Aberth. Withdrawal of this rejection is respectfully requested.

Claims 12 and 28 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kolawa and Aberth in view of the article entitled "IEEE Standard &54 for Binary Floating-Point Arithmetic" ("Kahan"). Claim 28 is cancelled by this reply. Accordingly, this rejection is now moot with respect to cancelled claim 28. With respect to claim 12, the rejection is respectfully traversed.

Claim 12 depends from claim 1. As discussed above, Kolawa and Aberth fail to teach or suggest all the limitations of independent claim 1. Further, Kahan fails to teach or suggest that which Kolawa and Aberth lack as evidenced by the fact that Kahan is only relied upon to teach or suggest "wherein execution of the compiled instrumented code halts if the accuracy threshold hold is exceeded." (See Office Action mailed July 2, 2007, p. 13). In view of the above, the Examiner has failed to establish a *prima facie* case of obviousness using Kolawa, Aberth, and Kahan. Accordingly, claim 1 and dependent claim 12 are patentable over Kolawa, Aberth, and Kahan. Withdrawal of this rejection is respectfully requested.

New Claims

New claims 31-37 have been added by this reply. New claim 31 includes the subject matter of original claim 2. New claim 32 includes the subject matter of original claim 3. New claim 33 includes the subject matter of original claim 4. New claim 34 includes the subject matter of amended claim 5. New claim 35 includes the subject matter of original claim 7. New claim 36

includes the subject matter of amended claim 9. New claim 37 includes the subject matter of original claim 15. No new subject matter has been introduced by any of the new claims.

New dependent claims 31-37 depend from amended independent claim 30. As discussed above, none of the cited prior art, whether viewed separately or in combination, is sufficient to establish a *prima facie* case of obviousness for amended independent claim 30. Accordingly, none of the cited prior art, whether viewed separately or in combination, is sufficient to establish a *prima facie* case of obviousness for dependent claims 31-37. In view of the above, a favorable action in the form of a notice of allowance is respectfully requested for new claims 31-37.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 03226/367001; SUN040407).

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Respectfully submitted,

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Attachment (Applicant Request for Examiner Interview)